

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) An apparatus for monitoring a tire pressurization state in a tire, the apparatus comprising:

a magneto-mechanical pressure sensor being in or on the tire;

an electromagnetic excitation system for interrogating said magneto-mechanical pressure sensor;

a receiver for receiving information from said electromagnetic excitation system; and

a data interpretation system for translating said received information into the tire pressurization state, said data interpretation system being connected to a display to communicate the tire pressurization state to an operator.

2. (original) The apparatus of claim 1, wherein said magneto-mechanical pressure sensor is in the tire in a location selected from the group consisting of in a wheel rim, beneath a tread, in a tire sidewall, on said tire sidewall, molded in a tire wall, in a complementary location to a centrifugal force of the tire when rotating, in a portion of a valve stem assembly, in any duct that

accesses an internal air pressure of the tire, and any combinations thereof.

3. (original) The apparatus of claim 1, wherein said magneto-mechanical pressure sensor has a linear motion mechanical sensing component, a magnetically hard element and a magnetostrictive element.

4. (original) The apparatus of claim 3, wherein said magnetically hard element is connected to said linear motion mechanical sensing component, and wherein said magnetically hard element moves relative to said magnetostrictive element.

5. (original) The apparatus of claim 3, wherein said magnetostrictive element has a first connected end and a second free end, said first end being connected to a location selected from the group consisting of a sensor housing, the tire, a mounting system and any combinations thereof.

6. (original) The apparatus of claim 3, further comprising a component that deflects when exposed to a differential pressure and a reference pressure chamber, wherein said component is selected from the group consisting of a sealed diaphragm, a sealed bellows, a snap action member, and any combinations thereof.

7. (original) The apparatus of claim 6, wherein said reference pressure chamber is selected from the group

consisting of a sealed chamber, a sealed chamber having a pressurized gas therein, a tube communicating to ambient, a sealed indentation of the tire, and any combinations thereof.

8 to 27 (cancelled)

28. (original) An apparatus for monitoring a tire pressurization state in a tire, the apparatus comprising:

a magneto-mechanical pressure sensor having a linear motion mechanical sensing component, a magnetically hard element and a magnetostrictive element, and a member in said magneto-mechanical pressure sensor, wherein said member toggles at a predetermined pressure differential from a first position to a second position, wherein said member allows said magnetostrictive element to move relative to said magnetically hard element at said first position, and said member changes a characteristic resonance of at least one of said magnetostrictive element and said magnetically hard element at a second position by a manner being selected from the group consisting of touching and preventing said magnetostrictive element from resonating relative to said magnetically hard element, changing a proximity of said magnetostrictive element relative to said magnetically hard element, changing a proximity of said magnetically hard element relative to said magnetostrictive element, dampening a vibration of said magnetically hard element, dampening a vibration of said magnetostrictive element, and any combinations thereof;

Serial No.:
Art Unit:

10/836,321
2855

an electromagnetic excitation system for interrogating said magneto-mechanical pressure sensor;

a receiver for receiving information from said electromagnetic excitation system; and

a data interpretation system for translating said received information into the tire pressurization state, said data interpretation system being connected to a display to communicate the tire pressurization state to an operator.

29. (original) The apparatus of claim 28, wherein said member is a disc and contacts at least one of said magnetostrictive element and said magnetically hard element at an inflation pressure of the tire.

30. (original) The apparatus of claim 28, wherein said member is a disc and allows at least one of said magnetostrictive element and said magnetically hard element to move at a second pressure being lower than an inflation pressure of the tire.

31. (original) The apparatus of claim 28, wherein said member is a bi-stable snap acting disc.

32 to 51 (cancelled)